VPM Series Thermal Switch Application Note

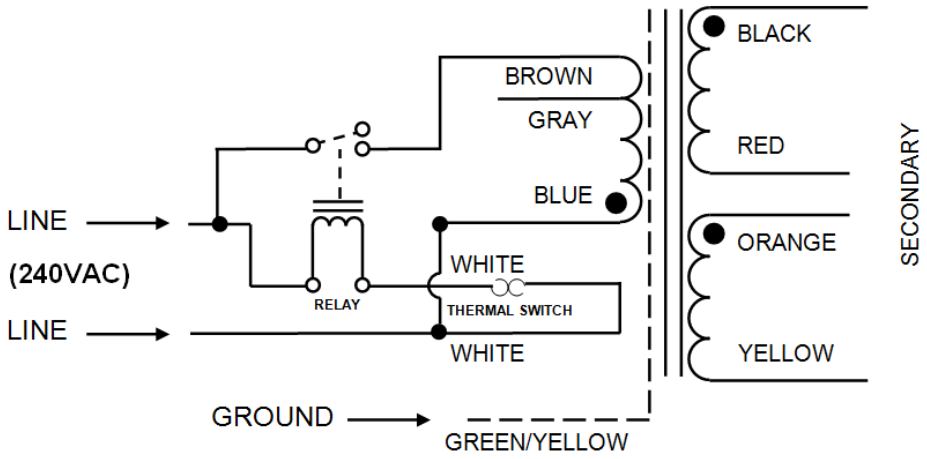
Introduction:

VPM series transformers rated between 25VA and 1kVA thermal switch device in series with the primary windings. Transformer with dual primaries will use two thermal switches: one on each winding.

VPM series transformers rated higher than 1kVA also have this built in protective device; however, this thermal switch is independent from the primary windings with separate lead outs for connection to a relay or similar disconnect circuit.

Typical application of independent Thermal Switch:

There are several ways normally closed thermal breakers can be used. The thermal switch could be connected to control the circuit that turns the transformer on and off or a simple relay circuit could be used. Here is a schematic example for a circuit with a relay that could be used for the VPM240-15600.



When the line voltage is applied the relay will close and provide power to the primary of the transformer. If the transformer overheats, the thermal switch will open. This will stop the flow of current to the primary winding. The current to the transformer will resume when the transformer cools and the thermal switch resets.

Here is an example of how a relay can be selected for use with the VPM240-15600.

1. The VPM240-15600 Data Sheet will have transformer schematic and data you will need.
2. The relay switching current will be VA / efficiency / transformer input Voltage = 3750 (VA)/.95(eff.)/240(VAC) = 16.45A (We will round up to 20A for convenience).
3. The relay in our example will be powered by the power line (240VAC). The relay may be powered from another source of your choice. Transformer thermal switch current must not exceed 6A.